



OTF CCSDS SM&C

Interoperability

Prototype

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Project Definition

- Description:
 - Demonstrate interoperability between two space flight Mission Operations Centers (MOC).
 - Emulate telemetry, actions, and alert flows between the two centers.
 - One framework uses a COTS C3I system that uses CORBA to interface to the local OTF data network.
 - Second framework relies on current Houston MCC frameworks and ad hoc clients.
 - Messaging relies on SM&C MAL, Core and Common Service formats.
 - Transport layer uses AMS.
 - Centralized SM&C Registry uses HTTP/XML for transport/encoding.



Project Status

- Description:
 - Down to one COTS C3I vendor.
 - Implementation uses C/C++, Python, Java, CORBA, WSDL, XML, Java Swing, PyGTK, gSOAP, SOAPPy/ZSI.
 - SM&C Registry (Directory Services) is placed globally on the web.
 - The cross registration problem is avoided.
 - SM&C Login is deferred – no authentication is needed.
 - No authorization code required.
 - Defer AMS RAMS gateways – just use two AMS cells.

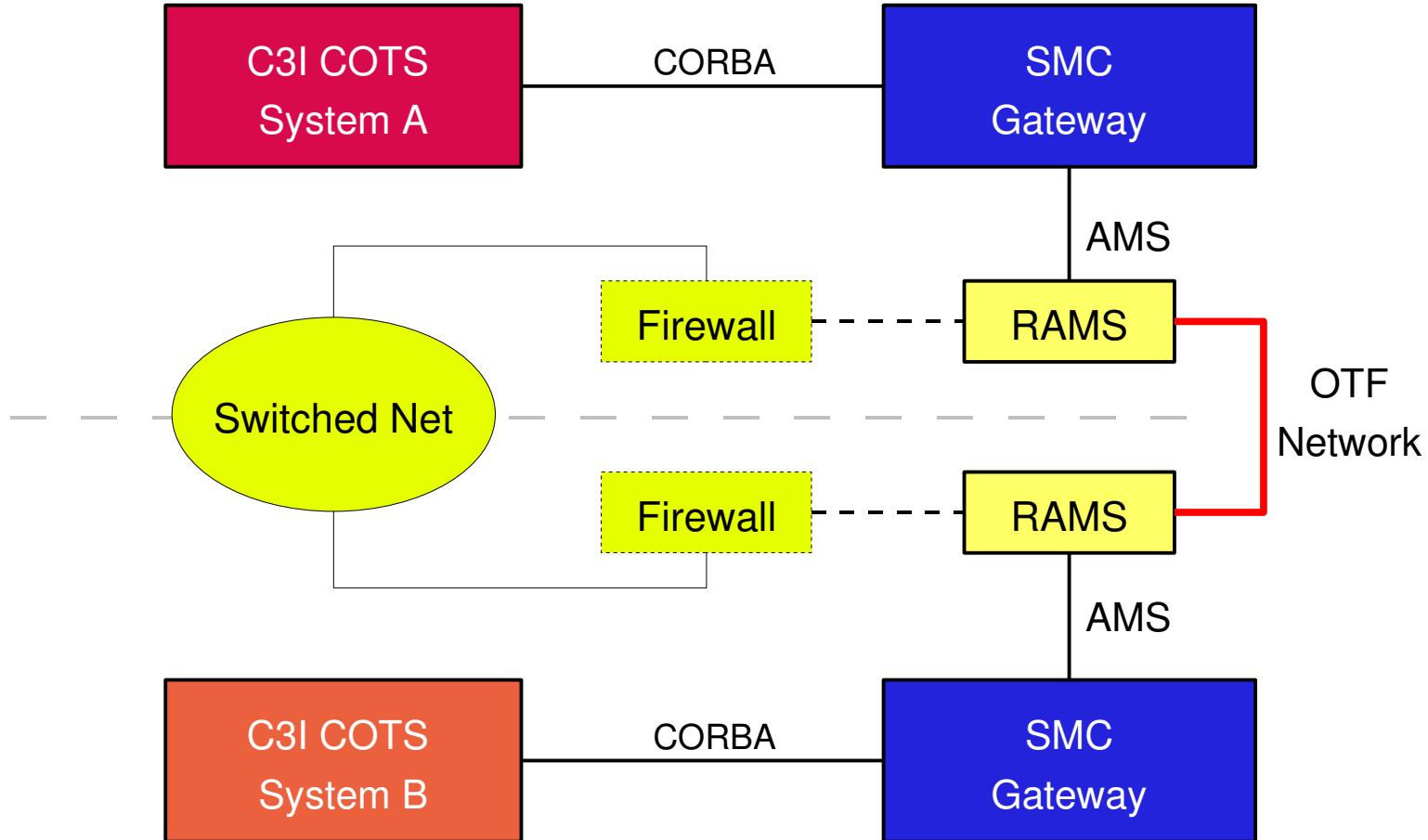


Issues

- Telemetry:
 - Data cycles and time homogeneity.
- Actions:
 - Precheck is not used.
- Login Service:
 - What common encryption standard?
 - Symmetric, yet in the public domain.
 - Cross authentication.
 - Trust anchor approach.
 - Directory Services without login.

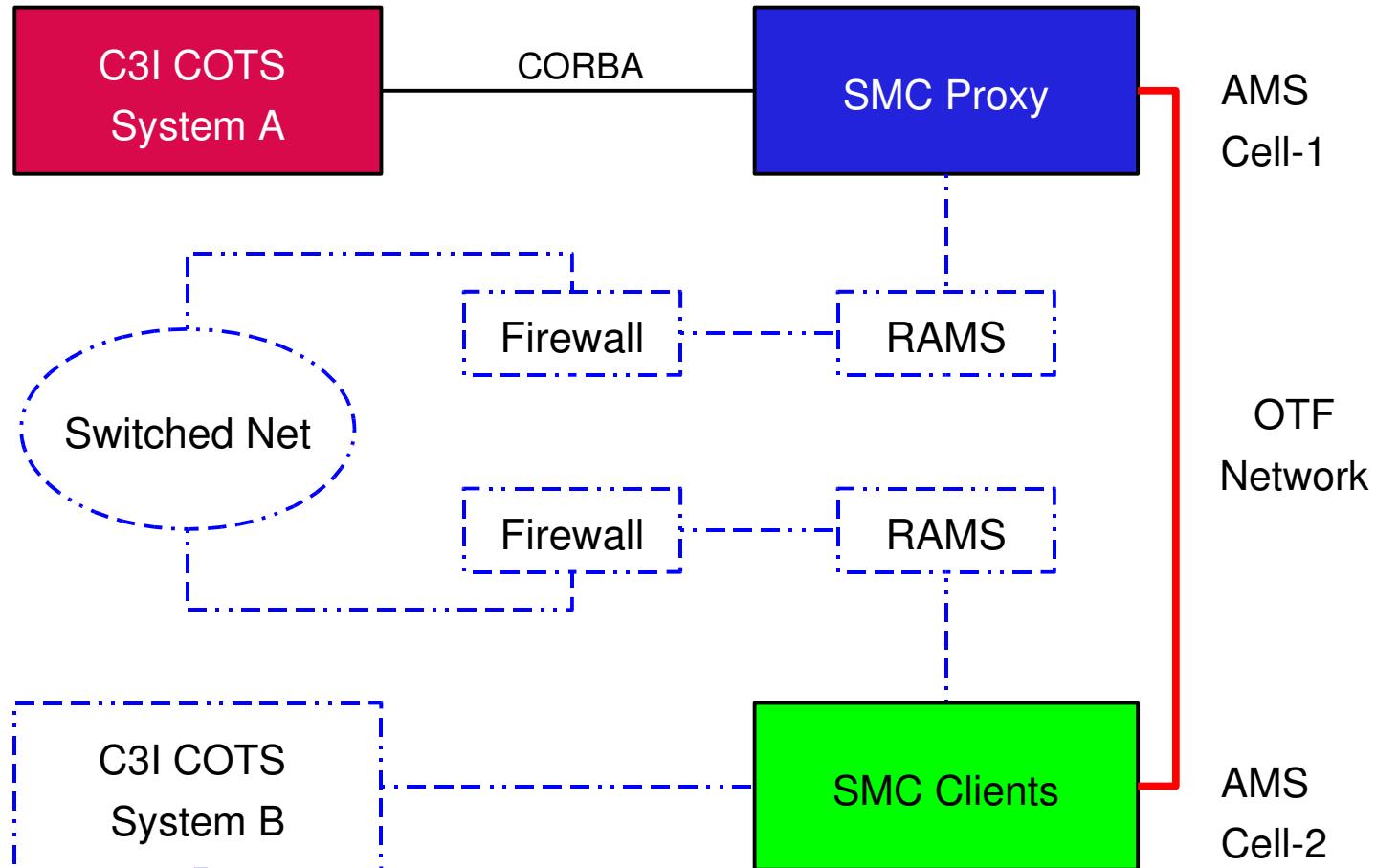


Phase I Prototype – PLANNED



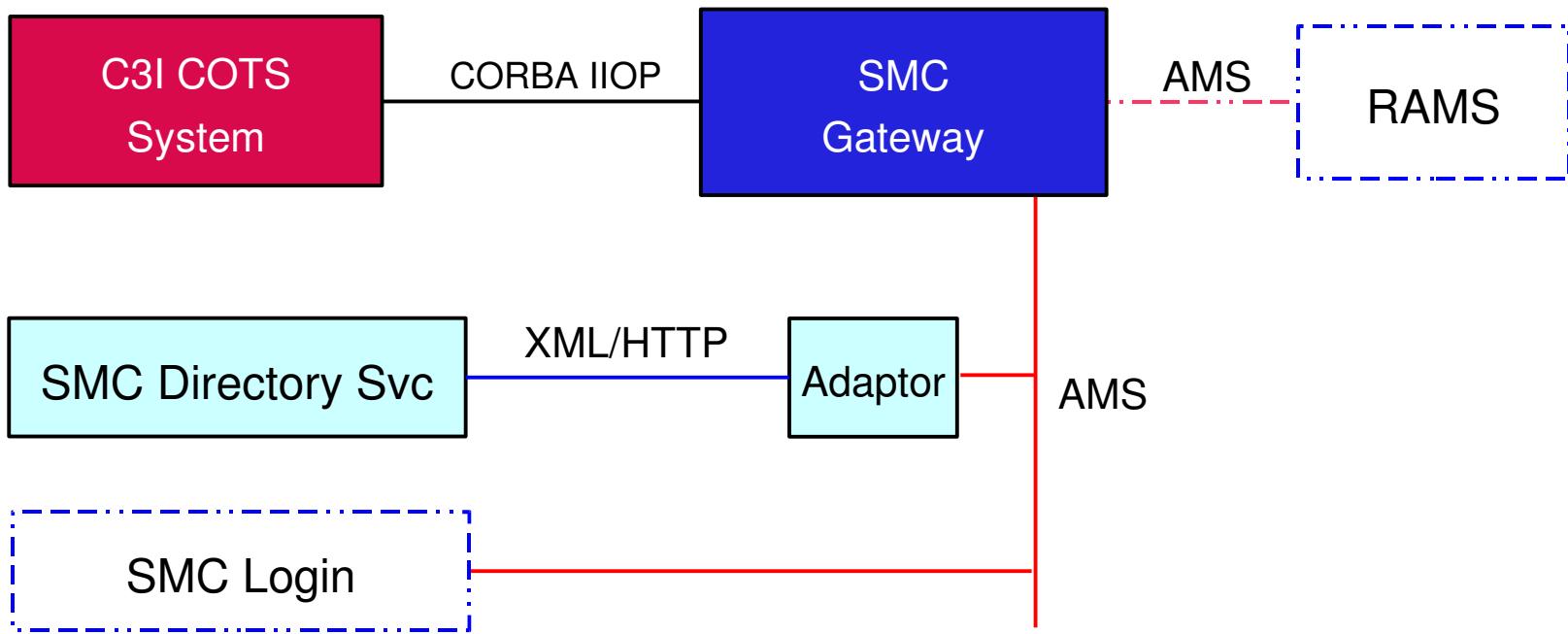


Phase I Prototype – ACTUAL



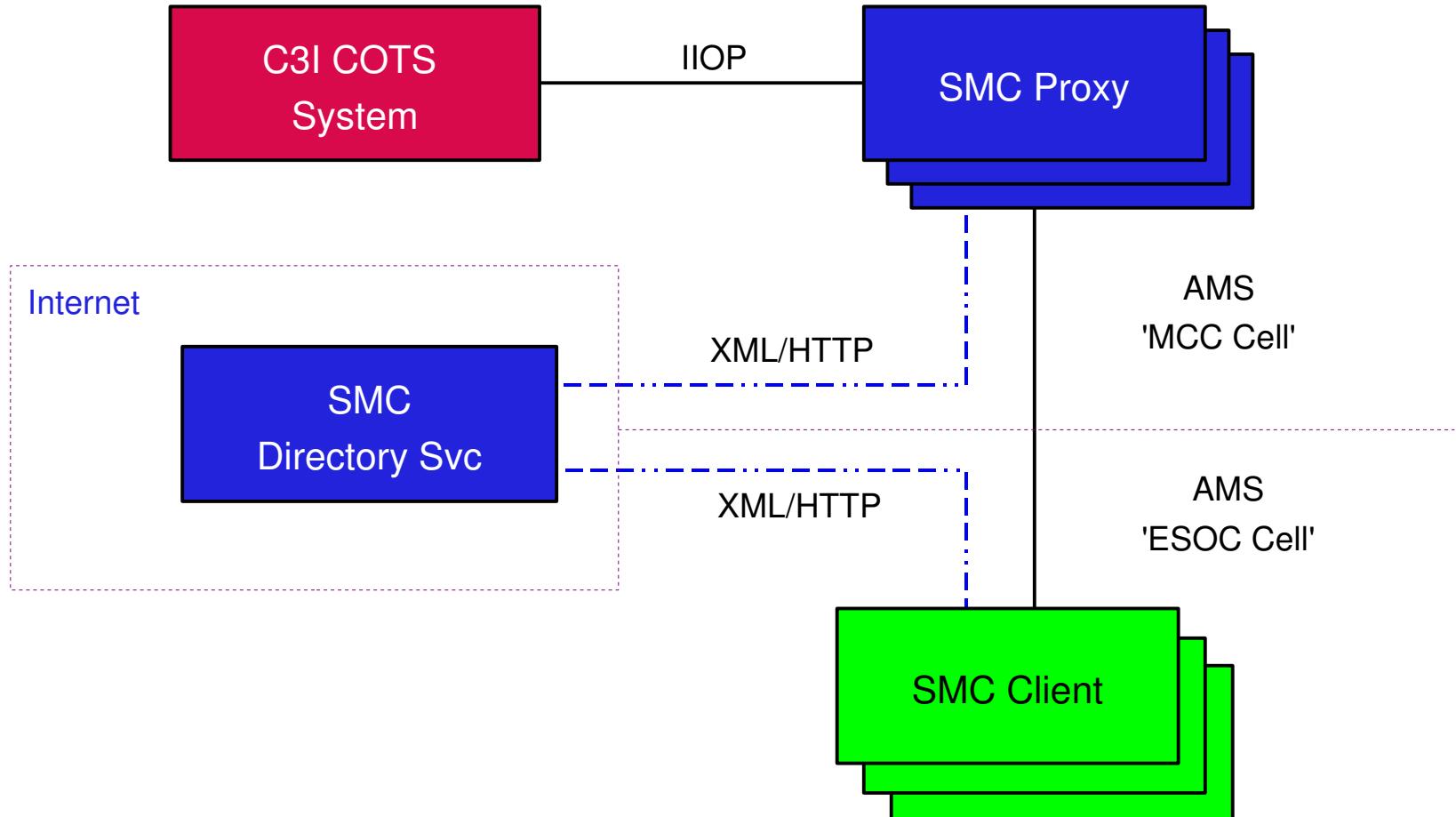


External Interfaces



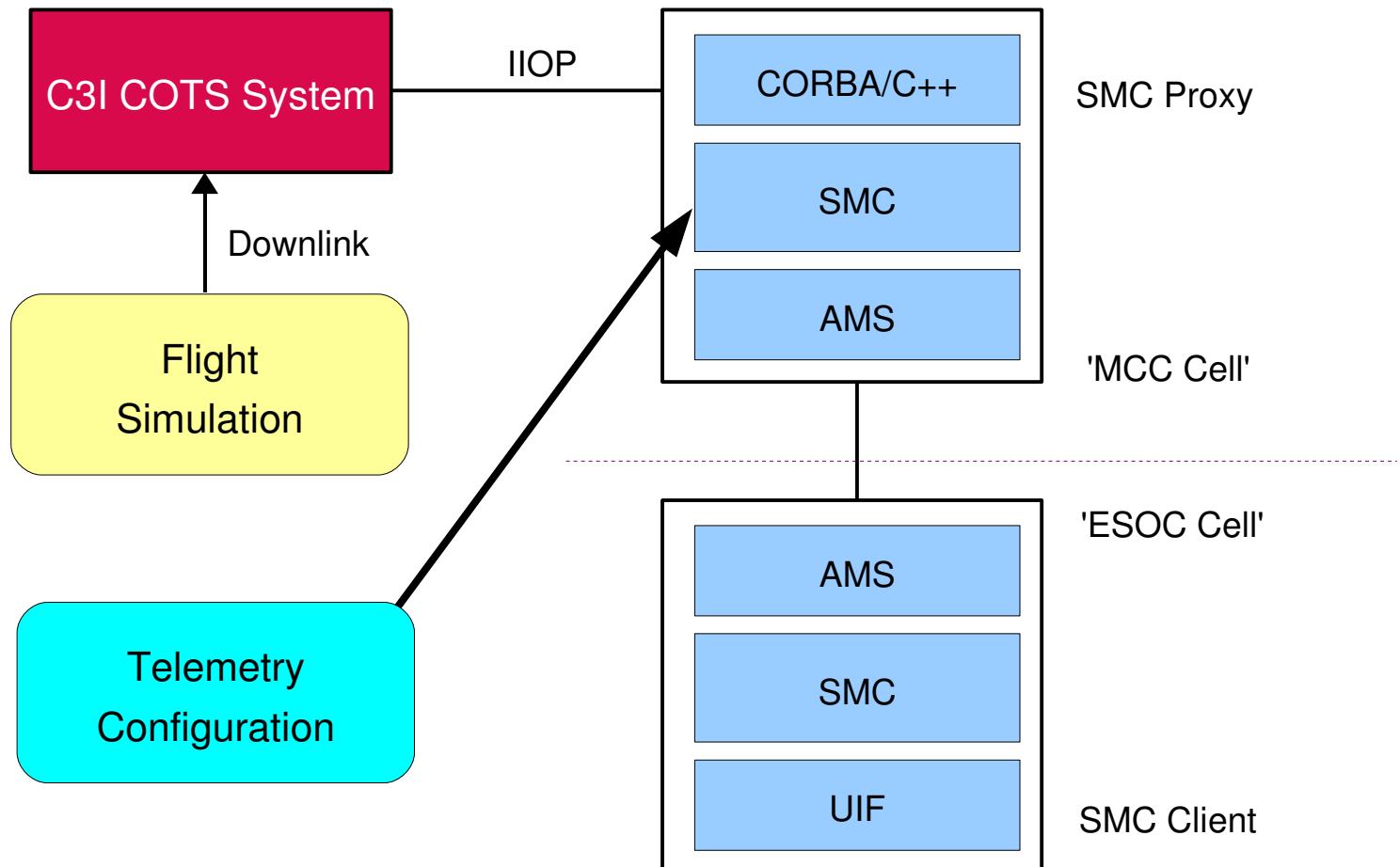


Current OTF Phase I Implementation



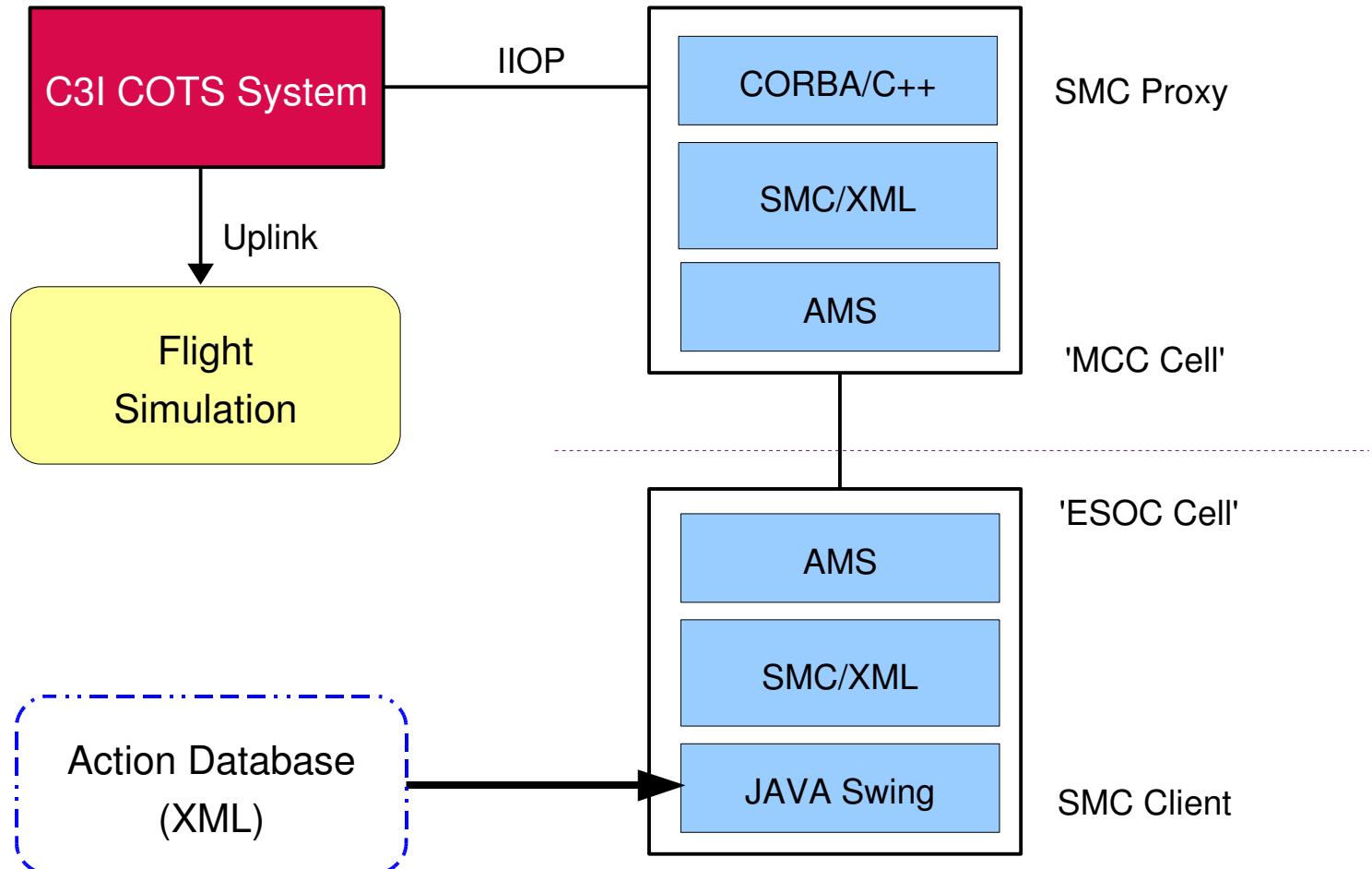


SMC Telemetry





SMC Actions





SMC Alerts

